

CLAIMS

1. Process for increasing the capacity of a urea plant, comprising a compression
5 section, a high-pressure synthesis section, a urea recovery section, in which a
urea melt is formed, and optionally a granulation section, characterized in that the
capacity of the urea plant is increased by the additional installation of a melamine
plant, the urea melt from the urea recovery section of the urea plant being fed
10 wholly or partly to the melamine plant and the residual gases from the melamine
plant being returned wholly or partly to the high-pressure synthesis section and/or
the urea recovery section of the urea plant.
2. Process according to claim 1, characterized in that the urea plant is a urea
stripping plant.
3. Process according to either of claims 1-2, characterized in that the melamine
15 plant is a gas-phase melamine plant.
4. Process according to any one of claims 1-3, characterized in that the residual
gases from the melamine plant are returned to the urea plant as a carbamate-
containing stream.
5. Process according to any one of claims 1-4, in which the high-pressure synthesis
20 section comprises a carbamate condenser, characterized in that the residual
gases or the carbamate-containing stream are fed to the carbamate condenser or
to a line that leads to the carbamate condenser.
6. Process according to either of claims 4-5, characterized in that the carbamate-
containing stream coming from the melamine plant and a carbamate-containing
25 stream coming from the urea plant are recovered together, before the carbamate-
containing stream is returned to the urea plant.
7. Process according to any one of claims 4-6, characterized in that the carbamate-
containing stream that is returned to the urea plant contains 10-40 wt.% water.
8. Process according to any one of claims 4-6 characterized in that the carbamate-
30 containing stream that is returned to the urea plant contains 15-25 wt.% water.
9. Process according to either of claims 1-2, characterized in that the melamine
plant is a high-pressure melamine plant.

10. Process according to any one of claims 1-2 and 9, in which the high-pressure synthesis section comprises a carbamate condenser, characterized in that the residual gases are fed to the carbamate condenser or to a line that leads to the carbamate condenser.
- 5 11. Process according to claim 9, characterized in that the residual gases from the melamine plant are returned to the urea plant as a carbamate-containing stream, the water content of this carbamate stream being less than 25 wt.%.
12. Process according to any one of claims 1-11, characterized in that the CO₂ weight fraction in the residual gases coming from the melamine plant is more than 5% relative to the total quantity of CO₂ fed to the urea plant
10 13. Process according to any one of claims 1-11, characterized in that the CO₂ and NH₃ weight fraction in the residual gases coming from the melamine plant is more than 5% relative to the total quantity of CO₂ and NH₃ fed to the urea plant
14. Process according to any one of claims 6-8 and 12, characterized in that the
15 temperature of the carbamate-containing stream is increased by more than 20 °C before this stream is fed to the high-pressure synthesis section of the urea plant.
15. Process according to claim 1, characterized in that the residual gases to be returned are split into a stream that is rich in carbon dioxide and a stream that is rich in ammonia before being returned wholly or partly to the urea plant.
- 20 16. Urea plant comprising a compression section, a high-pressure synthesis section and a urea recovery section, characterized in that the high-pressure synthesis section and the urea recovery section have a higher capacity than the compression section.
17. Urea plant according to claim 16, characterized in that the capacity of the high-
25 pressure synthesis section and the urea recovery section is 5-50 wt.% higher than the capacity of the compression section and/or the granulation section.